WallVault® Systems

Complete AV Switching and Control Systems for Wall Mounted Ultra Short-Throw Projectors and Flat Panel Displays

Key Features

- Complete, centralized AV switching and control systems with stereo audio amplification
- Ultra short-throw projector mount and equipment enclosure provides a single solution for securely mounting the projector as well as switching and audio amplification equipment to a wall
- Wall mount kit securely mounts and conceals switching and audio amplification components to a wall in classrooms with a flat panel display
- Extron exclusive patented Flat Field® speakers deliver consistent sound levels across the listening area
- Powerful 50 watt rms audio amplifier
- Energy-efficient design offers Extron exclusive Auto Power Save and Standby modes designed to lower energy usage and reduce operating costs

Model	Version Description	Part #	
WVS 200	Two Input WallVault, ultra short throw	42-149-13	
WVS 300	Three Input WallVault, ultra short throw	42-150-13	
WVS 400	Four Input WallVault, ultra short throw	42-151-13	
WVS 210	Two Input WallVault, wall mount kit	42-163-03	
WVS 310	Three Input WallVault, wall mount kit	42-164-03	
WVS 410	Four Input WallVault, wall mount kit	42-165-03	
WVS 200	Two Input WallVault, ultra short throw	42-149-03	RETIRED
WVS 300	Three Input WallVault, ultra short throw	42-150-03	RETIRED
WVS 400	Four Input WallVault, ultra short throw	42-151-03	RETIRED

Note: 42-149/150/151-13 are suggested replacements for 42-149/150/151-03.

DESCRIPTION

Extron **WallVault® Systems** are easy-to-use, network-enabled, all-inclusive AV switching and control packages, making them ideal for single-display K-12 classrooms. These systems were specifically developed for classrooms with a wall mounted short-throw projector or flat panel display. WallVault Systems use economical twisted pair cable for transmitting signals and include network connectivity for Web-based asset management, monitoring, and control. Extron WallVault Systems take their name from the unique USFM 100 and WMK 150 enclosures that securely mount and conceal the system switching and audio amplification components on the wall.

Power Saving Features

At the heart of each WallVault System is the PVS 305SA Five Input Twisted Pair PoleVault® Switcher with Integrated Stereo Audio Amplifier that offers two Extron-exclusive power saving modes designed to lower energy usage and reduce operating costs.

- **Auto Power Save Mode:** This mode automatically shuts off the audio amplifier inside the PVS 305SA after 30 minutes if no audio is present. This provides a close to 50% reduction in energy usage compared to normal, idle operation.
- **Standby Mode:** This mode shuts off both the audio amplifier and the AV inputs of the PVS 305SA which power the input wallplates. Standby Mode is activated by the MLC 104 IP Plus or MLC 226 IP MediaLink Controller included in a complete WallVault System. Standby Mode can be scheduled at specific times when the system is not in use or can be set to activate by monitoring when the projector is shut down. Standby Mode reduces power consumption of the PVS 305SA over 60%.

Standard WallVault Systems
WallVault Systems have been designed in standard systems to streamline the design and procurement process. These two-, three-, and four-input systems include all the necessary audio and video switching, audio amplification, system control, source connectivity, speakers, and cabling for a complete classroom AV solution. All that remains is to add the sources and video projector or flat panel display.

The standard WallVault System packages are each ordered using a single part number.

- **WVS 200** Two Input WallVault System for ultra short throw projectors: Accommodates one VGA computer-video and one composite video source and includes the USFM 100 Ultra Short-Throw Projector Mount and Equipment Enclosure.
- **WVS 300** Three Input WallVault System for ultra short throw projectors: Accommodates two VGA computer-video and one composite video source and includes the USFM 100 Ultra Short-Throw Projector Mount and Equipment Enclosure.
- **WVS 400** Four Input WallVault System for ultra short throw projectors: Accommodates two VGA computer-video and two composite video sources and includes the USFM 100 Ultra Short-Throw Projector Mount and Equipment Enclosure.
- **WVS 210** Two Input WallVault System for wall mounted displays: Accommodates one VGA computer -video and one composite video source and includes a WMK 100 wall mount kit.
- **WVS 310** Three Input WallVault System for wall mounted displays: Accommodates two VGA computer-video and one composite video source and includes a WMK 100 wall mount kit.
- **WVS 410** Four Input WallVault System for wall mounted displays: Accommodates two VGA computer-video and two composite video sources and includes a WMK 100 wall mount kit.

Each system package includes the following core components:

- One PVS 305SA Five Input Twisted Pair PoleVault Switcher with Integrated Stereo Audio Amplifier- not available separately
- One MLC 104 IP Plus MediaLink Controller with IP Link - White
- One pair of FF 120 Flat Field Speakers for Drop-In Tile Ceilings
- Two lengths of SPK 18 Precut Speaker Cable - Plenum, 35' (10.6 m)
- One MLC IR/RS-232 Projector Communication Cable - Plenum, 50' (15 m)
- One MLC PW/RS-232/VC Power, Switcher Communications Cable - Plenum, 50' (15 m)
- One composite video cable
- One MVGA M-M Male to Male Micro VGA Cable
- One or two lengths of CAT 5 twisted pair cable per wallplate - Plenum
- Two, three, or four exclusive PoleVault AV input wallplates- see below

WVS 200:
Includes one **PVT RGB D** wallplate, one **PVT CV D** wallplate, one **USFM 100** ultra short-throw projector mount and equipment enclosure, and one **UPB 25** universal projector bracket.

WVS 300:
Includes two **PVT RGB D** wallplate, one **PVT CV D** wallplate, one **USFM 100** ultra short-throw projector mount and equipment enclosure, and one **UPB 25** universal projector bracket.

WVS 400:

Includes two **PVT RGB D** wallplates, two **PVT CV D** wallplates, one **USFM 100** ultra short-throw projector mount and equipment enclosure, and one **UPB 25** universal projector bracket.

WVS 210:
Includes one **PVT RGB D** wallplate and one **PVT CV D** wallplate , and one **WMK 100** wall mount kit.

WVS 310:
Includes two **PVT RGB D** wallplate and one **PVT CV D** wallplate , and one **WMK 100** wall mount kit.

WVS 410:
Includes two **PVT RGB D** wallplates and two **PVT CV D** wallplates, and one **WMK 100** wall mount kit.

System Customization
WallVault Systems must always include the PVS 305SA PoleVault Switcher, projector or wall mount kit, speakers, and two to four AV inputs. WallVault Systems can be customized to meet classroom requirements. System pricing is based on the components and quantities selected.

VoiceLift™ Microphone
The VoiceLift™ Microphone enables the creation of a classroom sound field system that allows the teacher's voice to be heard clearly throughout the classroom. Studies show that use of a sound field system results in increased student achievement and a reduction in teacher vocal strain and voice fatigue.

Features

- **Complete, centralized AV switching and control systems with stereo audio amplification**
- **Ultra short-throw projector mount and equipment enclosure provides a single solution for securely mounting the projector as well as switching and audio amplification equipment to a wall**
- **Wall mount kit securely mounts and conceals switching and audio amplification components to a wall in classrooms with a flat panel display**
- **Extron exclusive patented Flat Field® speakers deliver consistent sound levels across the listening area**
- **Powerful 50 watt rms audio amplifier**
- **Energy-efficient design offers Extron exclusive Auto Power Save and Standby modes designed to lower energy usage and reduce operating costs**
- **VoiceLift® Microphone option allows the teacher’s voice to be evenly distributed throughout the room**
- **Easy-to-use MediaLink® controller included**
- **Systems use CAT 5-type cable for quick and easy connections and low-cost installation**
- **AV Input wallplates use active, balanced twisted pair transmission which is resistant to signal loss and interference**
- **Simplifies setup; no programming required**
- **Network connectivity for Web-based monitoring and rapid problem resolution**
- **Tamper-resistant, theft-deterrent design**
- **Auto projector shut-off saves power and extends lamp life**

SPECIFICATIONS

WallVault® Systems

Overall system

UTP transmission	Optimal cable length is 50' - 75' (15 m - 23 m). Minimum = 15' (5 m) Maximum = 125' (38 m)

NOTE *Distances were measured at 1024x768, 60 Hz resolution.*

Shipping weight	
WVS 210	45 lbs (21 kg)
WVS 310	47 lbs (22 kg)
WVS 410	49 lbs (23 kg)
WVS 200	70 lbs (32 kg)
WVS 300	72 lbs (33 kg)
WVS 400	74 lbs (34 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
MTBF	30,000 hours
Warranty	3 years parts and labor

PVS 305SA Switcher/Power Amplifier

Video	
Bandwidth	RGB: 200 MHz (-3 dB) @ 50' (15 m) of cable Composite video: 100 MHz (-3 dB)
Video input	
Number/signal type	2 VGA-UXGA RGBHV, RGBS (inputs 1 and 2) 2 VGA-UXGA RGBHV, RGBS, or composite video (configurable, inputs 3 and 4)
Connectors	4 pairs female RJ-45 (See the user's manual for pin configurations.)
Video output	
Number/signal type	1 VGA-UXGA RGBHV, RGBS (follows input type) 1 composite video
Connectors	1 female 15-pin HD 1 female RCA
Audio input	
Number/signal type	4 proprietary signals from Extron PVT Series wallplates and transmitters 1 stereo, balanced/unbalanced (input 5)
Connectors	4 female RJ-45 (2 shared with RGB inputs, 2 shared with configurable RGB/composite video inputs) 1 female 3.5 mm captive screw connector, 5 pole (input 5)
VoiceLift receiver input	1 female RJ-45, -10 dBV (316 mVrms) nominal level
Audio output	
Number/signal type	1 line output, stereo/mono, balanced/unbalanced 1 power amplifier, stereo or dual mono (default), 2 channels total
Connectors	(1) 3.5 mm captive screw connector, 5 pole (1) 5.0 mm captive screw connector, 4 pole

NOTE *Unbalanced wired outputs produce 6 dB of attenuation. Balanced output has unity gain/attenuation.*

Power amplifier	
Amplifier type	Class D
Impedance	2/4/8 ohms (single channel) 2/4/8 ohms (stereo)
Output power	25 watts (rms) per channel (1 watt tolerance) at 2/4/8 ohms, 20 Hz to 20 kHz, 1% THD
General	
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 5 A
Mounting	
Pole mount	Yes, with optional pole mounting kit
Enclosure dimensions	1.7" H x 8.7" W x 3.0" D (1U high, half rack wide) (approximately 4.3 cm H x 22.1 cm W x 7.6 cm D)
Product weight	2.5 lbs (1.1 kg), plus power supply (0.9 lbs [0.4 kg])
Regulatory compliance	
Safety	

	CE, c-UL, UL UL rated for use in plenum airspaces: meets UL 2043 for heat and smoke release, excluding the power supply; meets UL 60065 for safety.
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
Environmental	Complies with the appropriate requirements of RoHS, WEEE

PVT CV D, PVT RGB D, PVT RGB D Plus Wall Plates

NOTE *These transmitters are compatible only with an Extron PoleVault® Switcher (PVS). They are not compatible with other models of twisted pair receivers.*

Video	
Gain	Unity
Video input and loop-through	
Number/signal type	
PVT RGB D	1 VGA-UXGA RGBHV, RGBS
PVT RGB D Plus	1 VGA-UXGA RGBHV, RGBS 1 buffered RGBHV, RGBS local monitor loop-through
PVT CV D	1 composite video
Connectors	
PVT RGB D	1 female 15-pin HD
PVT RGB D Plus	2 female 15-pin HD (1 for input, 1 for loop-through)
PVT CV D	1 female RCA
Video output	
Number/signal type	
PVT RGB D, PVT RGB D Plus	2 analog proprietary signals
PVT CV D	1 analog proprietary signal
Connectors	
PVT RGB D, PVT RGB D Plus	2 female RJ-45
PVT CV D	1 female RJ-45
Audio input	
Number/signal type	
PVT RGB D Plus	2 stereo, unbalanced: 1 input, 1 pass-through
PVT RGB D, PVT CV D	1 stereo, unbalanced
Connectors	
PVT RGB D, PVT RGB D Plus	(1) 3.5 mm mini audio jack (tip, ring, sleeve)
PVT CV D	1 pair female RCA
Audio output to a PoleVault switcher	
Number/signal type	1 analog proprietary signal
Connector	1 female RJ-45
Audio output, pass-through	PVT RGB D Plus only: 1 stereo, unbalanced
Connector	(1) 3.5 mm captive screw connector, 3 pole
General	
Power	Supplied by the PoleVault twisted pair receiver/switcher
Power input requirements	
PVT RGB	5.5 VDC, 260 mA
PVT RGB D Plus	5.5 VDC, 150 mA
PVT CV D	5.5 VDC, 110 mA
Mounting	
Furniture or wall mount	Yes, with the included Decora® wall plate
Enclosure dimensions	
PVT RGB D faceplate	2.6" H x 1.3" W x 0.3" D (6.6 cm H x 3.3 cm W x 0.7 cm D) (Fits the opening in a 1 gang Decora plate.)
PVT RGB D device	2.6" H x 1.6" W x 0.7" D (6.6 cm H x 4.1 cm W x 1.8 cm D) (Depth excludes connectors, height excludes mounting tabs.)
PVT RGB D Plus, PVT CV D faceplate	2.8" H x 1.6" W x 0.2" D (7.1 cm H x 4.1 cm W x 0.5 cm D)
PVT RGB D Plus, PVT CV D device	2.7" H x 1.7" W x 1.6" D (6.9 cm H x 4.3 cm W x 4.1 cm D) (Depth excludes connectors, height excludes mounting tabs.)

Product weight	0.2 lbs (0.1 kg)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI

MLC 104 IP Plus

Control — host ports	
Serial host port	1 bidirectional RS-232 front panel 2.5 mm mini stereo jack
Baud rate and protocol	38400, 8 data bits, 1 stop bit, no parity
Ethernet host port	1 RJ-45 female
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, ICMP (ping), IP, TCP, DHCP, HTTP, SMTP, Telnet
Web server	Up to 200 simultaneous sessions 7.25 MB nonvolatile user memory
Secondary control panel (SCP)	(1) 3.5 mm 5-pole direct insertion captive screw connector
Control — serial ports	
Display control port	(1) 3.5 mm direct insertion captive screw connector, 3 pole, for bidirectional RS-232 control (±5 V)
Switcher control port	(1) 3.5 mm direct insertion captive screw connector, 3 pole, for bidirectional RS-232 control (±5 V)
Control — IR port	
IR control port	(1) 3.5 mm direct insertion captive screw connector, 2 pole TTL level (0 to 5 V) infrared control up to 1 MHz
Digital I/O control	
Number/type	3 digital input/output (configurable)
Connector	(1) 3.5 mm direct insertion captive screw connector, 4 pole
General	
Power	Supplied by the PVS 305SA twisted pair receiver/switcher
Power input requirements	12 VDC, 0.285 A (0.305 A if used with an optional IRCM-DV+)
Mounting	Wall and furniture mountable
Enclosure type	High-impact plastic faceplate, metal rear enclosure
Enclosure dimensions	Faceplate: 4.5" H x 4.6" W x 0.1" D (11.4 cm H x 11.7 cm W x 0.3 cm D) (2 gang) Device: 2.7" H x 3.4" W x 1.8" D (6.9 cm H x 8.6 cm W x 4.6 cm D) (Depth excludes knob and buttons. Fits some 2 gang boxes. Allow at least 1.9" [4.8 cm] depth in the wall or furniture.)
Product weight	1.9 lbs (0.9 kg)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
Accessibility	Complies with the appropriate requirements of Section 508 of the Rehabilitation Act (29U.S.C.794d).

USFM 100 (WVS 200, WVS 300, and WVS 400 Systems)

Mounting	Wall mount with included hardware
Maximum projector load capacity	20 lbs (9.1 kg) projector weight (does not include the UPB 25)
Material	Steel (structural parts), plastic (covers), aluminum (boom arm covers)
Dimensions	
Base plate	11.1" H x 34.4" W x 2.2" D (28.3 cm H x 87.4 cm W x 5.6 cm D)
Base plate with covers	12.9" H x 36.3" W x 2.7" D (32.9 cm H x 92.2 cm W x 7.0 cm D)
Boom arm	12.5" H x 3.6" W x 21.7 - 31.8" D (31.9 cm H x 9.1 cm W x 55.0 - 80.8 cm D)
Boom extension range	17.5" (44.4 cm)
Product weight	17 lbs (7.7 kg)
NOTE *Weights exclude the UPB 25.*	
Regulatory compliance	
Safety	c-UL, UL

UPB 25 (WVS 200, WVS 300, and WVS 400 Systems)	
Adjustment ranges	The UPB 25 can be angled within the following ranges to level the projector: ±4° roll ±25° pitch 360° yaw, 10° if flush mounted
Maximum load capacity	25 lbs (11.3 kg)
Enclosure type	Steel
Projector bracket dimensions	2.2" H x 6.25" W x 5.7" D (5.5 cm H x 15.9 cm W x 14.5 cm D) (Dimensions exclude legs/feet.)
Product weight	3.7 lbs (1.7 kg)
Regulatory compliance	
Safety	CE, c-UL, UL

WMK 150 (WVS 210, WVS 310, and WVS 410 Systems)	
Mounting	Wall mount with included hardware
Maximum load capacity	15 lbs (6.8 kg)
Material	Steel base plate, aluminum cover
Dimensions	
Base plate	12.9" H x 15.4" W x 2.0" D (32.7 cm H x 39.0 cm W x 5.1 cm D)
Cover	13.0" H x 15.5" W x 2.75" D (33.0 cm H x 39.4 cm W x 7.0 cm D)
Product weight	4.5 lbs (2.0 kg)
Regulatory compliance	
Safety	c-UL, UL, OSHPD anchorage pre-approval

FF 120 Flat Field® Speakers	
Power capacity	16 W (rms) continuous pink noise 32 W (rms) continuous program
Nominal coverage angle	170° conical coverage
Nominal impedance	8 ohms per speaker
Mounting	Drops into a 2' x 2' (61 cm x 61 cm) or 2' x 4' (61 cm x 122 cm) suspended tile.
Enclosure outer dimensions	3.25" H x 23.75" W x 11.75" D (8.3 cm H x 60.3 cm W x 29.9 cm D)
Product weight	Single: 4.7 lbs (2.1 kg)
Regulatory compliance	
Safety	NFPA90A, NFPA70; UL listed for use in plenum airspaces: meets UL 2043 for heat and smoke release; meets UL 1480 for commercial and professional audio systems.

NOTE *All nominal levels are at ±10%.*

NOTE *Specifications are subject to change without notice.*

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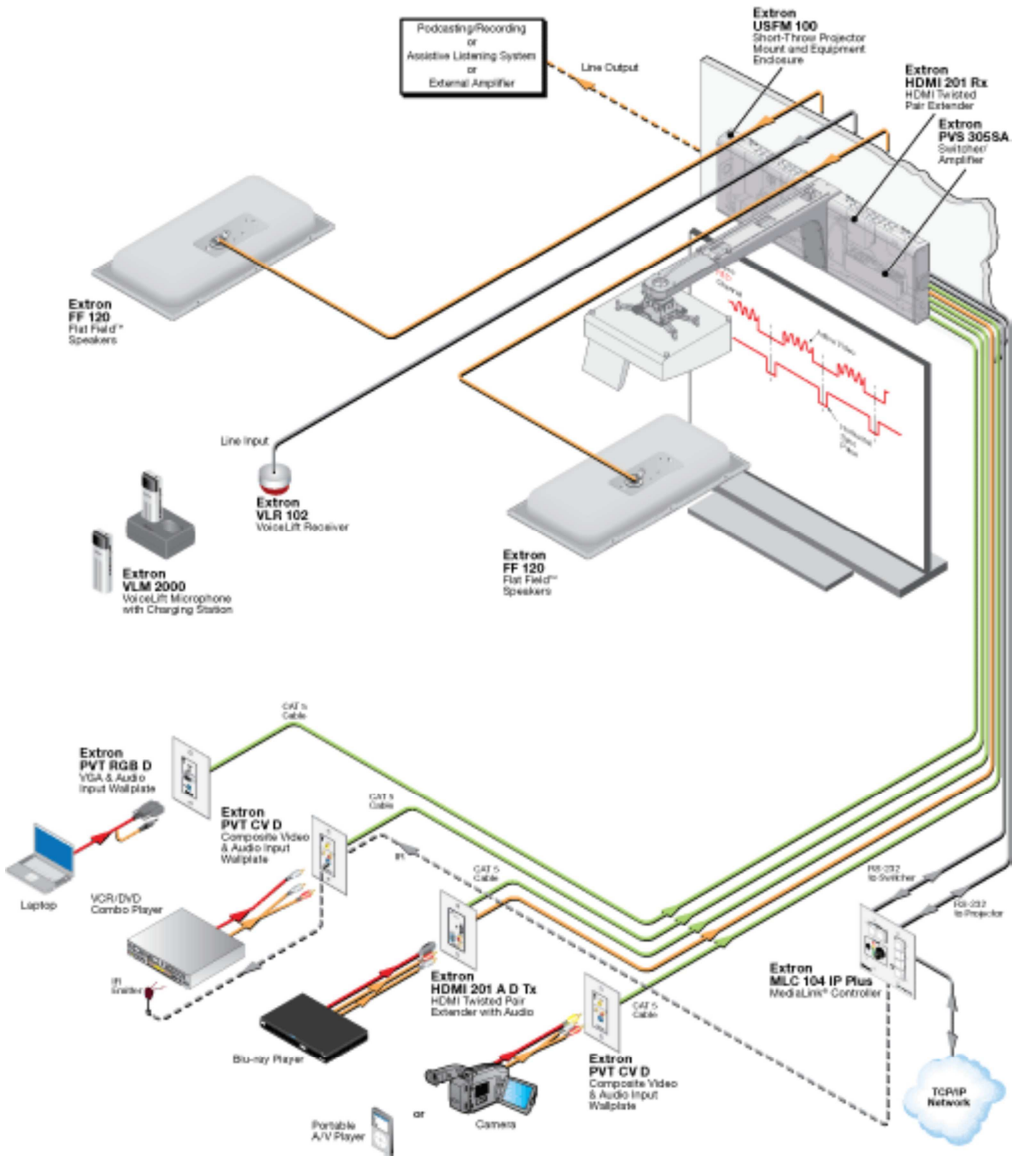
DIAGRAM



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